

AMENDMENTS TO THE CLAIMS

The listing of claims below replaces all prior versions of claims in the application.

1. (Currently Amended): A method of producing a sintered body of a thermoelectric conversion material, ~~wherein, in producing a thermoelectric conversion material comprising a porous material composed of a sintered body, comprising:~~

~~mixing microparticles of void forming agent having a particle diameter of 1 μm or less or a fibrous substance having a diameter of 1 μm or less that serves as a void-forming agent is mixed with a base with the thermoelectric conversion material powder, thereby obtaining a mixture; and in sintering this mixture, the mixed powder is sintered forming the mixture into a shaped body;~~

~~heating the shaped body to densify solid material in an atmosphere of an inert gas, a reducing gas, or a controlled oxidizing gas so that after the densification of a solid part formed by sintering the base powder proceeds, where the void forming agent is not substantially gasified from the shaped body; and then~~

~~sintering the shaped body at a temperature where the void-forming agent is gasified and removed from the sintered shaped body, thereby producing [[a]] the sintered body of the thermoelectric conversion material in which continuous electrical conduction paths composed of independent closed pores having an average pore diameter of 1 μm or less or independent closed air tubes having an average diameter of 1 μm or less corresponding to the microparticles or fibrous substance are provided inside the material sintered body.~~

2-5. (Cancelled).

6. (Currently Amended): A method of producing a sintered body of a thermoelectric conversion material, ~~wherein, in producing a thermoelectric material composed of a sintered body, comprising:~~

mixing microparticles of void forming agent having a particle diameter of 1 μm or less or a fibrous substance having a diameter of 1 μm or less that serves as a void-forming agent is ~~mixed with a base~~ with the thermoelectric conversion material powder, thereby obtaining a mixture; and in sintering this mixture, the mixed powder is sintered forming the mixture into a shaped body while heating to densify solid material in the shaped body at a temperature ~~lower than the temperature at which~~ where the void-forming agent is not substantially gasified, dissolved, or melted so that after the densification of a solid part formed by sintering the base powder proceeds; and then

sintering the shaped body at a temperature where the void-forming agent is gasified and removed from the shaped body, thereby producing [[a]] the sintered body of the thermoelectric conversion material in which continuous electrical conduction paths composed of independent closed pores having an average pore diameter of 1 μm or less or independent closed air tubes having an average diameter of 1 μm or less corresponding to the microparticles or fibrous substance are provided inside the material sintered body.

7-13. (Cancelled).

14. (Previously Presented): The method of producing a thermoelectric conversion material according to claim 1, wherein the distance between nearest voids composed of the independent closed pores or the independent closed air tubes is 5 μm or less, and the density of the number of voids is $1 \times 10^{10}/\text{cm}^3$ or more.

15. (Previously Presented): The method of producing a thermoelectric conversion material according to claim 6, wherein the distance between nearest voids composed of the independent closed pores or the independent closed air tubes is 5 μm or less, and the density of the number of voids is $1 \times 10^{10}/\text{cm}^3$ or more.

16 (New): A method of producing a sintered body of a thermoelectric conversion material, comprising:

mixing microparticles of void forming agent having a particle diameter of 1 μm or less or a fibrous substance having a diameter of 1 μm or less that serves as a void-forming agent with the thermoelectric conversion material powder, thereby obtaining a mixture;

forming the mixture into a shaped body;

heating the shaped body to densify solid material in an atmosphere where the void forming agent is not substantially gasified from the shaped body; and then

sintering the shaped body in an oxidizing atmosphere where the void-forming agent is

oxidized and removed from the shaped body, thereby producing the sintered body of the thermoelectric conversion material in which continuous electrical conduction paths composed of independent closed pores corresponding to the microparticles or fibrous substance are provided inside the sintered body.

17. (New): A method of producing a sintered body of a thermoelectric conversion material, comprising:

mixing microparticles of void forming agent having a particle diameter of 1 μm or less or a fibrous substance having a diameter of 1 μm or less that serves as a void-forming agent with the thermoelectric conversion material powder, thereby obtaining a mixture;

forming the mixture into a shaped body while heating to densify solid material in the shaped body at a temperature where the void-forming agent is not substantially gasified; and then

sintering the shaped body in an oxidizing atmosphere where the void-forming agent is oxidized and removed from the shaped body, thereby producing the sintered body of the thermoelectric conversion material in which continuous electrical conduction paths composed of independent closed pores corresponding to the microparticles or fibrous substance are provided inside the sintered body.